FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

Please fill in the highlighted areas

all sections (IA, IB, IC, etc.) must be addressed or the application will be considered invalid

I. APPLICANT INFORMATION

A. Applicant Name: Big Blackfoot Chapter of Trout Unlimited

B. Mailing Address: PO Box 1

C. City: Ovando State: MT Zip: 59854

Telephone: 406-240-4824 E-mail: ryen@montanatu.org

D. Contact Person: Ryen Neudecker

Address if different from Applicant: See above

City: State: Zip:

Telephone: E-mail:

E. Landowner and/or Lessee Name (if other than Applicant): United States Forest Service-George Liknes, Fish Biologist

Mailing Address: 1569 US HWY 200

City: Lincoln State: MT Zip: 59639

Telephone: 406.362.7003 E-mail: georgealiknes@fs.fed.us

II. PROJECT INFORMATION*

A. Project Name: Copper Creek Restoration

River, stream, or lake: Copper Creek

Location: Township: 15N, 15N Range: 9W, 8W Section: 1, 6

Latitude: 47.085527 Longitude: -112.675879 *within project (decimal degrees)*

County: Lewis & Clark

B. Purpose of Project:

The purpose of this project is to improve floodplain function and reduce anthropogenic sediment inputs to Copper Creek by decommissioning approximately one mile of road adjacent to a historic and high flow channel of Copper Creek that became the main channel in 2014 and likely will become the main channel in the future. Copper Creek is a high priority, critical bull trout habitat stream that supports fluvial bull trout and genetically pure westslope cutthroat trout populations.

C. Brief Project Description:

Copper Creek is a third order tributary to the Landers Fork which feeds the upper Blackfoot River and flows 14 miles entirely through USFS land. Copper Creek is a high priority tributary as ranked in "An Integrated Stream Restoration and Native Fish Conservation Strategy for 182 streams in the Blackfoot Basin" and is listed as critical bull trout habitat, a bull trout core area stream and supports populations of pure westslope cutthroat trout. Copper Creek is one of the three main bull trout streams in the Blackfoot River that have been monitored since 1989 for bull trout spawning. Telemetry studies have traced bull trout originating from Copper Creek as far as 100 miles downstream. This project, which involves eliminating a chronic source of sediment to Copper Creek has been identified as a priority under the ***Collaborative Forest Landscape Restoration Program***—a program identified in 2009 by the Secretary of Agriculture to encourage the collaborative, science-based ecosystem restoration of priority forest landscapes.

Currently, a USFS road runs parallel with a high flow side-channel of Copper Creek and has been identified as problematic for Copper Creek especially when the side channel is active. Active erosion on stream banks has occurred cutting into the adjacent road system and runoff from the road system also contributes sediment to the stream channel. The proposed project involves ripping the existing road system (5,280 ft) 12 inches deep and 14 to 16 feet wide, meaning an excavator or dozer will de-compact the road surface, which will enhance infiltration and reduce runoff. The loosened surface and road fill impacting the stream channel and associated riparian areas will be pulled back to eliminate the road prism encroachment and used to recontour the slopes on the edge of the valley to a natural angle of repose or hauled off-site away from the riparian and floodplain area. Abandoned road surfaces will be also be reclaimed passively and actively. The newly loosened road surface enhances natural recolonization of vegetation, which in turn results in maintained infiltration capacity, protects against erosion and ultimately stabilizes the historic road prism. Large woody debris will also be incorporated onto the associated road surfaces and floodplains to create additional microsites to increase moisture retention, shelter young plants as they become established, and provide a source of organic material. Disturbed areas will be revegetated with a certified weed-free native streambank or appropriate upland grass seed mixture and soil amendments/erosion control will be applied as appropriate. Native cuttings, shrubs and trees will also be planted within riparian areas to facilitate shade and recruitment of woody debris when available. A noxious weed management plan will also be developed and implemented pre and post construction. To accommodate public access, 5,750 feet of new road will be constructed up on the terrace.

Specific objectives include: reestablish floodplain connectivity and function; restore the riparian corridor, eliminate a chronic source of sediment that will recur and allow for continued public access.

D. Length of stream or size of lake that will be treated: Close to one-mile of Copper Creek will immediately benefit from this project, in addition to a reduction in sediment to downstream spawning and rearing reaches.

E. Project Budget:

Grant Request (Dollars): $ 48,500

Contribution by Applicant (Dollars): $ 5,000 In-kind $ 6,735

(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): $ 397,518.50 In-kind $

(attach verification - See page 2 budget template)

Total Project Cost: **$ 457,735.50**

F. Attach itemized (line item) budget – see template

G. Attach **specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete a *supplemental questionnaire*** (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. **Attach land management & maintenance plans that will ensure protection of the reclaimed area**.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Bull trout and westslope cutthroat trout.

B. How will the project protect or enhance wild fish habitat?:

Sediment has been identified as a limiting factor for bull trout and we have an opportunity to improve riparian habitat at the upper end of the most important bull trout spawning reach in the headwaters of the Blackfoot River drainage upstream of the North Fork.

C. Will the project improve fish populations and/or fishing? To what extent?:

Yes, by providing off-site recruitment to the Blackfoot River and angling opportunities on-site. Copper Creek runs entirely through public land with numerous dispersed access sites.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

Yes, by increasing the quality of wild trout and spawning habitat in the Blackfoot River drainage. The public also has legal streamside access via adjacent USFS lands.

E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

The USFS has committed to signing an appropriate version of a Landowner Agreement for a minimum of 20 years or a time period required by the Future Fisheries Program. The USFS will continue to focus on revegetation efforts in the project area, which would be expected to be the most likely maintenance task.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

Already answered above. By removing a stream-side road, we will improve water quality conditions within Copper Creek.

G. What public benefits will be realized from this project?:

This project involves the continuation of the Blackfoot River Restoration program and the restoration of a westslope cutthroat stream. Public benefits include: 1) expanding suitable habitat conditions for pure westslope cutthroat trout and fluvial juvenile bull trout populations, 2) improved water quality on-site and downstream, and 3) contribute to the recovery of westslope cutthroat trout. Additionally, the Bull Trout Conservation Strategy lists the Copper Creek drainage as an important population that contributes to Blackfoot core bull trout population; the strategy identifies the main factor limiting recovery of bull trout as the lack of high quality tributaries throughout the watershed. This project, in conjunction with the cumulative effects of other projects in the drainage, will benefit bull trout and work towards stability and recovery of the core population, which is in the public's interest.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

This project will have no effect on water and property rights of adjacent landowners.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No commercial recreational use is known to legally occur at this site.

J. Is this project associated with the reclamation of past mining activity?

No.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: Ryer Neudecker Date: 05-18-2018

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

Mail To: Montana Fish, Wildlife & Parks
Fisheries Division
PO Box 200701
Helena, MT 59620-0701

E-mail To: Michelle McGree
mmcgree@mt.gov
(electronic submissions MUST be signed)

Incomplete or late applications will be rejected and returned to applicant.
Applications may be rejected if this form is modified.

*****Applications must be signed and *received* by the Future Fisheries Program Officer in Helena *before* December 1 and June 1 of each year to be considered for the subsequent funding period**.***

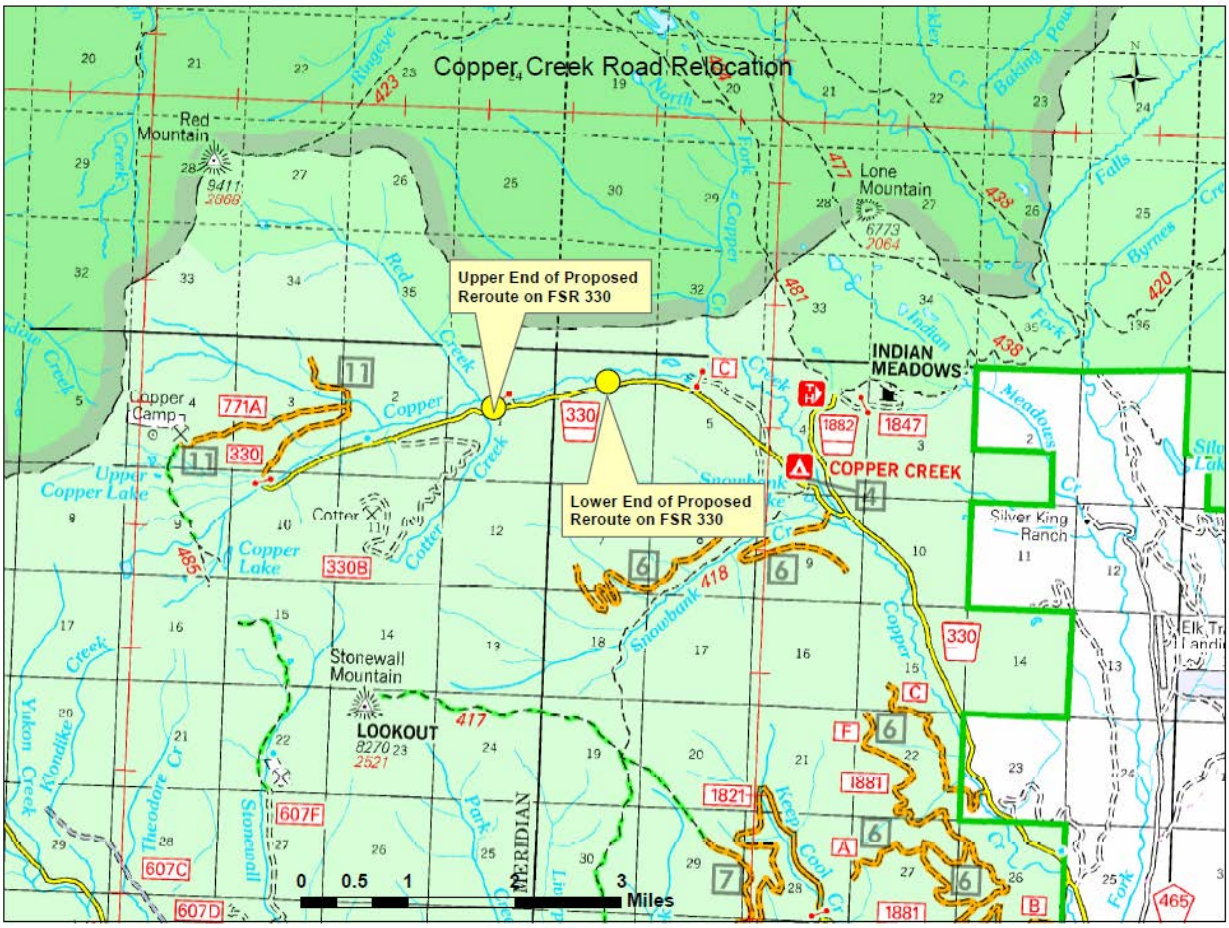


Figure 1: Location map of the proposed restoration reach on Copper Creek.

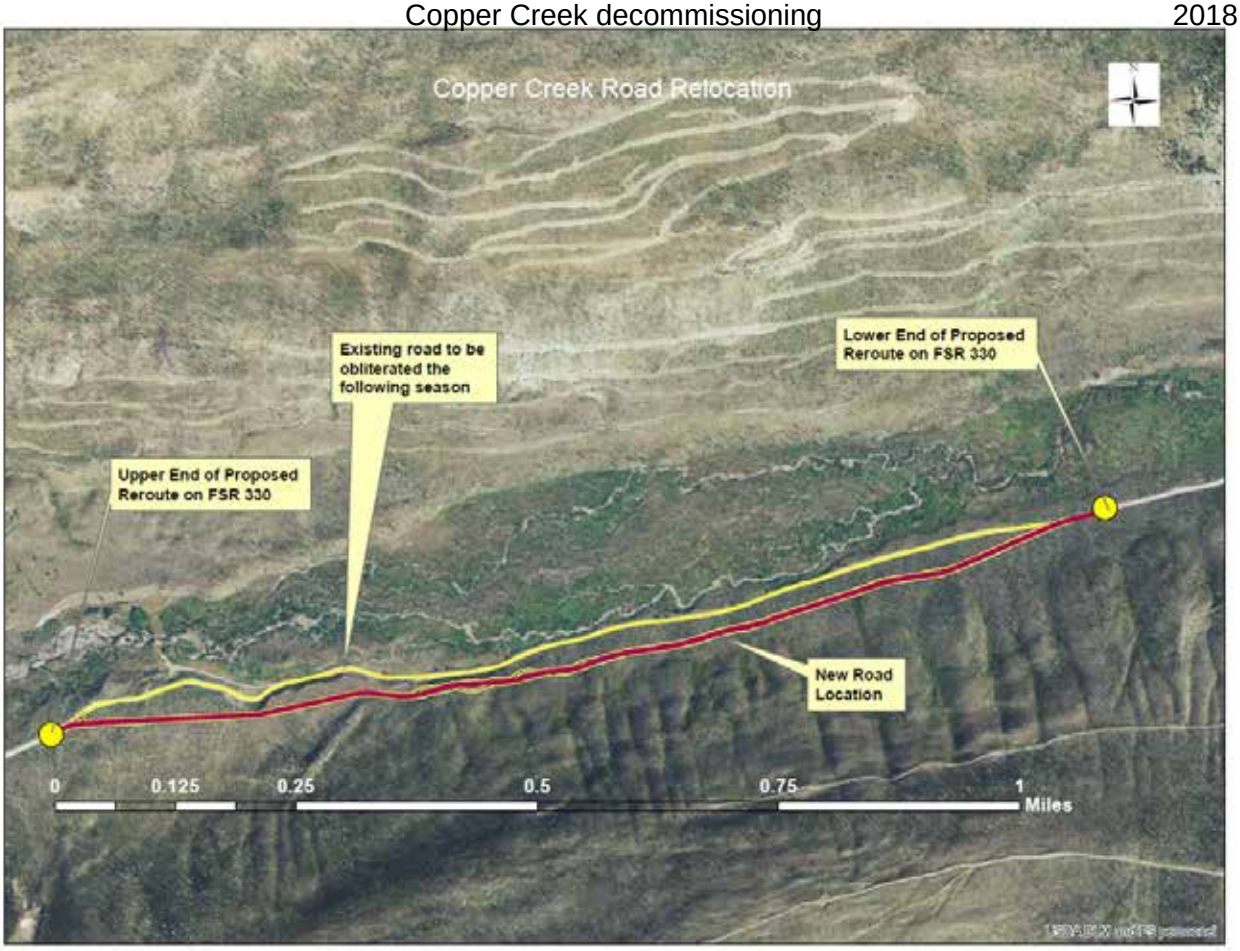


Figure 2: Aerial photo of the proposed restoration reach on Copper Creek. The area where the text balloon “Existing road to be obliterated the following season” is pointing is the area where severe sediment delivery occurred to Copper Creek in 2014.

Photos taken in 2014 showing the erosion and sediment delivered from the road into Copper Creek looking upstream.

Photos taken in2014 showing the erosion and sediment delivered from the road into Copper Creek looking downstream.

Photo looking down valley taken in May 2018 showing the existing road proposed to be moved to the bench on the right. Overflow channel is active, but an upstream log jam is temporarily preventing it from again becoming the principle channel of Copper Creek.

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS
(Revised 5/25/2018)

Copper Creek decommissioning

2018

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FISHERIES REQUEST	IN-KIND SERVICES	IN-KIND CASH	TOTAL
Personnel								
Survey	60	hours	$100.00	$ 6,000.00			$ 6,000.00	$ 6,000.00
Design	105	hours	$100.00	$ 10,500.00			$ 10,500.00	$ 10,500.00
Staking	60	hours	$100.00	$ 6,000.00			$ 6,000.00	$ 6,000.00
Permitting	20	hours	$45.00	$ 900.00		$900		$ 900.00
Oversight	125	hours	$86.50	$ 10,812.50	4,000.00	4,000.00	2,812.50	$ 10,812.50
Labor	80	hours	$45.00	$ 3,600.00			3,600.00	$ 3,600.00
				$ 37,812.50				$ 37,812.50
Travel								
Mileage	2000	miles	$0.58	$ 1,160.00		1,160.00		$ 1,160.00
Per diem	15	days	$45.00	$ 675.00		675.00		$ 675.00
				$ 1,835.00				$ 1,835.00
Construction Materials****								
Sediment Traps	7	Each	$750.00	$ 5,250.00	3,000.00		$2,250	$ 5,250.00
Soil erosion & Pollution Control	LS	each	$15,000.00	$ 15,000.00	5,000.00		$10,000	$ 15,000.00
Removal of culvert	LS	each	$5,000.00	$ 5,000.00	2,500.00		$2,500	$ 5,000.00
Roadway Excavation	4800	CY	$30.00	$ 144,000.00			144,000.00	$ 144,000.00
Embankment Construction	4000	CY	$40.00	$ 160,000.00			160,000.00	$ 160,000.00
Aggregate Surface Course	984	CY	$40.00	$ 39,356.00			39,356.00	$ 39,356.00
Grade Dip	13	each	$500.00	$ 6,500.00	2,000.00		4,500.00	$ 6,500.00
Road Decomm	1	Mile	$12,000.00	$12,000.00	$12,000.00			$12,000.00
24" Corrugated Culvert	60	LF	$100.00	$ 6,000.00	3,000.00		3,000.00	$ 6,000.00
Seeding, Reveg & Dry Mulch	LSQ	LS	$15,000.00	$ 15,000.00	12,000.00		3,000.00	$ 15,000.00
				$ 408,106.00				$ 408,106.00
Mobilization								
Mob/demob	1	lump sum	$10,000.00	$ 10,000.00	5,000.00		5,000.00	$ 10,000.00
			TOTALS	$ 457,735.50	$ 48,500.00	$ 6,735.00	$ 402,518.50	$ 457,735.50

MATCHING CONTRIBUTIONS

CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL	Secured? (Y/N)

US Forest Service	$ -		$ 387,518.50	YES
USFWS		$ 10,000.00	$ 10,000.00	YES
Big Blackfoot Chapter of Trout Unlimited	$ 6,735.00	$ 5,000.00	$ 11,735.00	YES

USDA United States Department of Agriculture
Forest Service
Helena –Lewis and Clark National Forest
Lincoln Ranger District
1569 Highway 200
Lincoln, MT 59639
(406) 362-7000

Date: May 23, 2018

Montana Fish Wildlife & Parks
Future Fisheries Habitat Improvement Program
P.O. Box 200701
Helena, MT 59620-0701

RE: Copper Creek Road Reroute and Sediment Reduction Project

Dear Michelle and Members of the Citizen Panel:

The Helena – Lewis and Clark National Forest has been working with The Big Blackfoot Chapter of Trout Unlimited and Montana Fish, Wildlife and Parks in a comprehensive effort to improve native fish habitat, correct connectivity issues, and reduce anthropogenic sediment delivery to streams and rivers in the upper Blackfoot drainage. One of the current projects that I would like to offer support to is a project that removes anthropogenic sediment delivery to the upper reaches of Copper Creek, which is a native fish assemblage supporting resident and migratory bull trout and a resident westslope cutthroat trout population. The upper reaches of Copper Creek are the primary spawning area for fluvial bull trout residing in the upper Blackfoot Valley and the upper Canyon area near Lincoln, Montana, but have been documented contributing to the population as far downstream as Bonner. Copper Creek is one of the few tributaries of the Blackfoot providing recruitment of bull trout to the Blackfoot Core Area.

The existing location of National Forest Service Road 330 (Copper Creek Road) is adjacent to Copper Creek's floodplain in the proposed project area. The 37,700 acre Snow-Talon fire of 2003 burned much of the Copper Creek drainage, which has supplied vast amounts of large woody debris that provide the important complex habitat required by bull trout and that benefits westslope cutthroat trout as well. However, the large input of wood into the riparian system has created log jams that increased channel dynamics resulting in the main channel accessing old historic or overflow channels. In 2014, this reach of the road was eroded away when an overflow channel became the main channel and a large sediment load was delivered to the most important spawning area for bull trout known to occur on the Helena-Lewis and Clark National Forest. This project eliminates the potential for these unnatural sediment delivery sources in the future by relocating the road using Southwest Crown of the Continent funds earmarked for resource restoration to a bench above the valley floor. Future Fisheries Funds requested for this proposal would be used for obliterating and recontouring the existing road, restoring the proper radius of curvature in the overflow channel and revegetation of the area once the new road is in place. This would allow natural channel changes to occur without large sediment influxes to the stream system and deleterious effects to native fish habitat.

Thank you for your consideration and support for this proposed project. If you have questions about the elements of this project that benefits native fisheries resources in the Blackfoot River drainage, please contact Ryen Neudecker of BBCTU at 406.240.4824, or myself at 406.362.7003.

Sincerely,

George Liknes
Aquatic Program Manager
Helena – Lewis and Clark National Forest

c: Ryen Neudecker, Big Blackfoot Chapter Trout Unlimited

REGION ONE

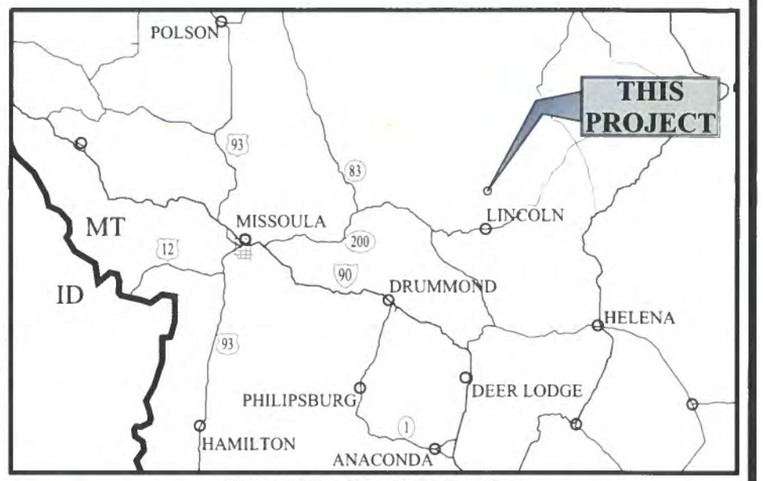
U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE, REGION ONE

PROPOSED ROAD PLANS FOR:

COPPER CREEK ROAD RELOCATION

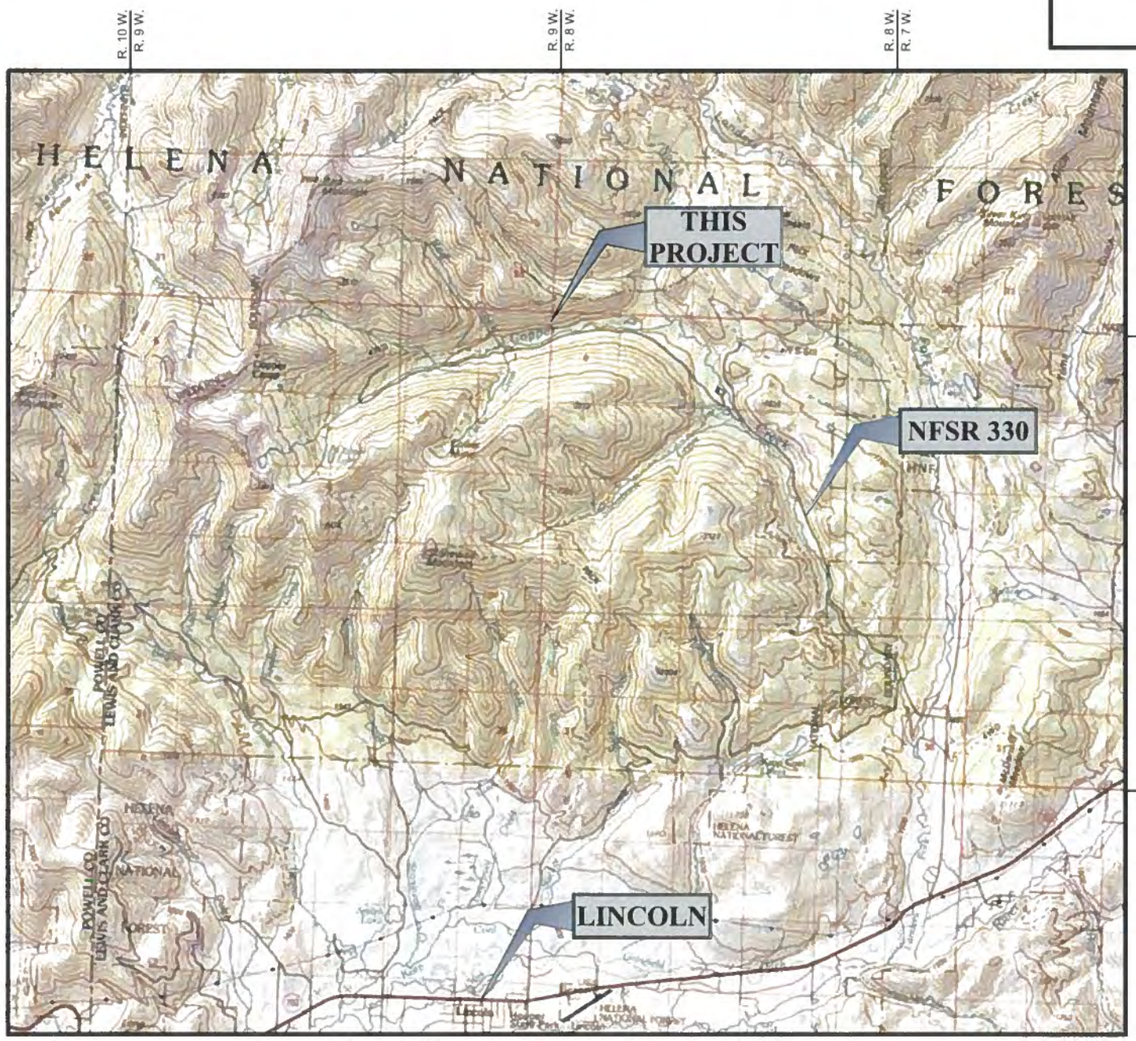
(NFSR 330-MP 8.15)

HELENA LEWIS & CLARK NATIONAL FOREST
LINCOLN RANGER DISTRICT
LEWIS & CLARK COUNTY, MONTANA



WESTERN MONTANA
SCALE: NO SCALE

SHEET LIST TABLE	
Sheet Number	Sheet Title
0	COVER SHEET
1	ESTIMATED QUANTITIES & GENERAL NOTES
2	EXISTING LAYOUT
3	GENERAL LAYOUT
4	ROAD DETAILS
5	ROAD P&P STA 0+00 TO STA 12+00
6	ROAD P&P STA 12+00 TO STA 24+00
7	ROAD P&P STA 24+00 TO STA 36+00
8	ROAD P&P STA 36+00 TO STA 48+00
9	ROAD P&P STA 48+00 TO STA 57+50
10	CROSS SECTIONS STA 0+00 TO STA 24+00
11	CROSS SECTIONS STA 25+00 TO STA 46+00
12	CROSS SECTIONS STA 47+00 TO STA 57+49



SEC.1, T.15 N., R. 9 W. & SEC.6, T.15 N., R. 8 W.

VICINITY MAP
SCALE: NO SCALE

REVIEWED:

_____ DATE _____
FOREST ENGINEER
HELENA LEWIS & CLARK NATIONAL FOREST

RECOMMENDED:

_____ DATE _____
LINCOLN DISTRICT RANGER
HELENA LEWIS & CLARK NATIONAL FOREST

APPROVED:

_____ DATE _____
FOREST SUPERVISOR
HELENA LEWIS & CLARK NATIONAL FOREST

CONTRACTOR SUPPLIED:
ROADWAY AGGREGATE
RIPRAP

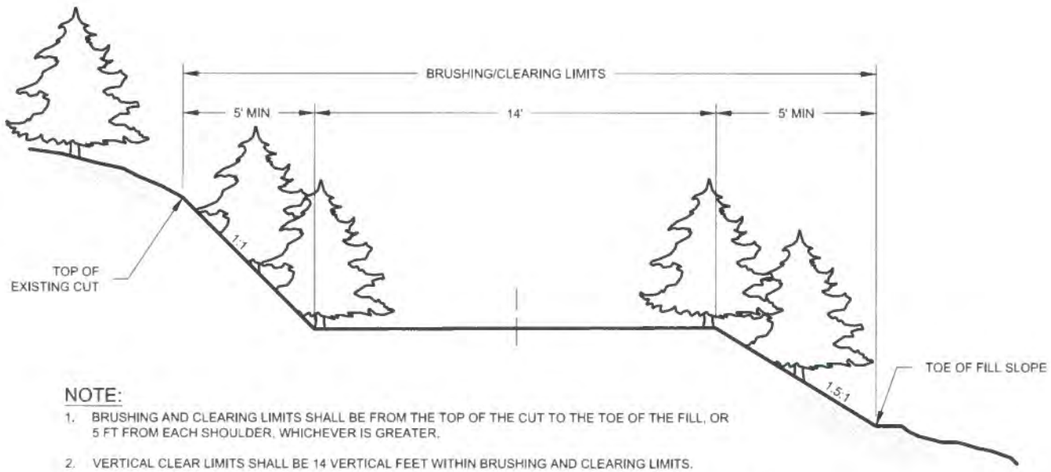
GOVERNMENT FURNISHED:
WASTE SITE
CONSTRUCTION WATER SOURCE

DRAFT FINAL
NOT FOR CONSTRUCTION

Morrison Maierle
engineers • surveyors • planners • scientists
1 Engineering Place Helena, MT 59602
Phone: 406.442.3050

SUMMARY OF QUANTITIES			
Pay Item	**Description**	**Unit**	**Quantity**
15101	**Mobilization**	*LS*	*1*
15710	**Sediment Traps**	*EACH*	*2*
15713	**Soil Erosion & Pollution Control**	*LS*	*1*
20101	**Clearing and Grubbing, Disposal Method C**	*LS*	*1*
20304	**Removal of Culvert, Disposal Method A**	*LS*	*1*
20401	**Roadway Excavation and Embankment, Compaction Placement Method 2, Tolerance Class E**	*CY**	*5,500*
20431	**Grade Dip**	*EACH*	*12*
20504	**Controlled Blast Hole**	*FOOT*	*10*
21103	**Roadway Obliteration, Method 1**	*MILE**	*1.0*
32412	**Aggregate Surface Course, Compaction Method B**	*CY**	*984*
60201	**24" Corrugated Metal Pipe Culvert**	*LF*	*70*
60201a	**18" Corrugated Metal Pipe Culvert**	*LF*	*91*
62528	**Seeding and Mulching Dry Method**	*LS*	*1*
62201	**Excavator Equipment Rental**	*HR*	*10*

* MEANS QUANTITY IS BASED ON DESIGN WITH NO MEASUREMENT OF ACTUAL QUANTITIES.



NOTE:

1. BRUSHING AND CLEARING LIMITS SHALL BE FROM THE TOP OF THE CUT TO THE TOE OF THE FILL, OR 5 FT FROM EACH SHOULDER, WHICHEVER IS GREATER.
2. VERTICAL CLEAR LIMITS SHALL BE 14 VERTICAL FEET WITHIN BRUSHING AND CLEARING LIMITS.

TYPICAL BRUSHING/CLEARING DETAIL

SCALE: N.T.S.

GENERAL NOTES:

SPECIFICATIONS: CONSTRUCT THE PROJECT IN COMPLIANCE WITH FEDERAL HIGHWAY ADMINISTRATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS" (FP-14) AND APPLICABLE FOREST SERVICE SPECIAL SPECIFICATIONS (FSSS).

SLASH:
ALL VEGETATION REMOVED DURING EXCAVATION SHALL BE STOCKPILED. SPREAD STOCKPILED SLASH ON FINISHED SLOPES AT THE DIRECTION OF THE COR. THIS WORK IS INCIDENTAL TO ITEM 15713.

SITE SPECIFIC NOTES:

1.) PAY ITEM 20304 IS REMOVAL AND DISPOSAL INCLUDING EXCAVATION OF EXISTING STRUCTURE ISINCIDENTAL TO PAY ITEM.

2.) PAY ITEMS 20401 AND 32412 INCLUDE ALL WORK AND MATERIALS FOR TURNAROUND CONSTRUCTION SHOWN ON DRAWINGS.

3.) PAY ITEM 20431 INCLUDES RIPRAP MATERIALS AND PLACEMENT FOR GRADE DIP OUTLET PROTECTION.

4.) PAY ITEM 21103 INCLUDES RIPPING AND SEEDING THE EXISTING TWO-TRACK FROM THE OBLITERATED ROAD TO THE EXISTING DISPERSED CAMP SITE.

5.) PAY ITEMS 60201 AND 60201a INCLUDE ALL EXCAVATION AND EMBANKMENT FOR CORRUGATED METAL PIPE CULVERTS. INCLUDES ALL MATERIALS AND EFFORT TO CONSTRUCT AS SHOWN IN THE DRAWINGS. INCLUDES FINISH GRADING OF THE INLET AREA TO CAPTURE AND DIRECT ALL SURFACE FLOW FROM UNNAMED TRIBUTARY TO 24" CULVERT.

EXCAVATION & EMBANKMENT NOTES:

1.) EXCAVATION & EMBANKMENT SHALL BE COMPLETED IN ACCORDANCE WITH FP-14, SECTION 204 AND FSSS 204.

2.) THERE IS NO ROCK BLASTING OR BEDROCK EXCAVATION EXPECTED ON THE PROJECT. NO BEDROCK HAS BEEN OBSERVED AT THE SITE. PAY ITEM 20504 IS INCLUDED IN THE QUANTITIES TO PROVIDE A UNIT COST TO COMPENSATE THE CONTRACTOR PER FOOT OF BLAST HOLE IF BEDROCK IS ENCOUNTERED DURING CONSTRUCTION. FOREST SERVICE APPROVAL IS REQUIRED BEFORE BEGINNING ANY WORK RELATED TO BLASTING OR BEDROCK EXCAVATION.

3.) CONSTRUCTION WATER SOURCE FOR COMPACTION AND DUST ABATEMENT WILL BE DESIGNATED BY THE COR WITHIN 5 MILES OF THE PROJECT SITE.

Big Blackfoot Chapter of Montana Trout Unlimited

Morrison Maierle
engineers • surveyors • planners • scientists
† Engineering Place Helena, MT 59602
Phone: 406.442.3050

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE
REGION ONE

COPPER CREEK ROAD RELOCATION

NFSR 330, M.P. 8.15

ESTIMATED QUANTITIES & GENERAL NOTES

Designed By:MDB	Design Checked:MDB
Drawn By:DAH	Drawing Checked:DAH

Sheet: **1** of **12**

R:\4835\004_COPPER CREEK ROAD\ACAD\SHEETS\1 ESTIMATED QUANTITIES & GENERAL NOTES.DWG PLOTTED BY:MATT BARNES ON Feb/16/2018

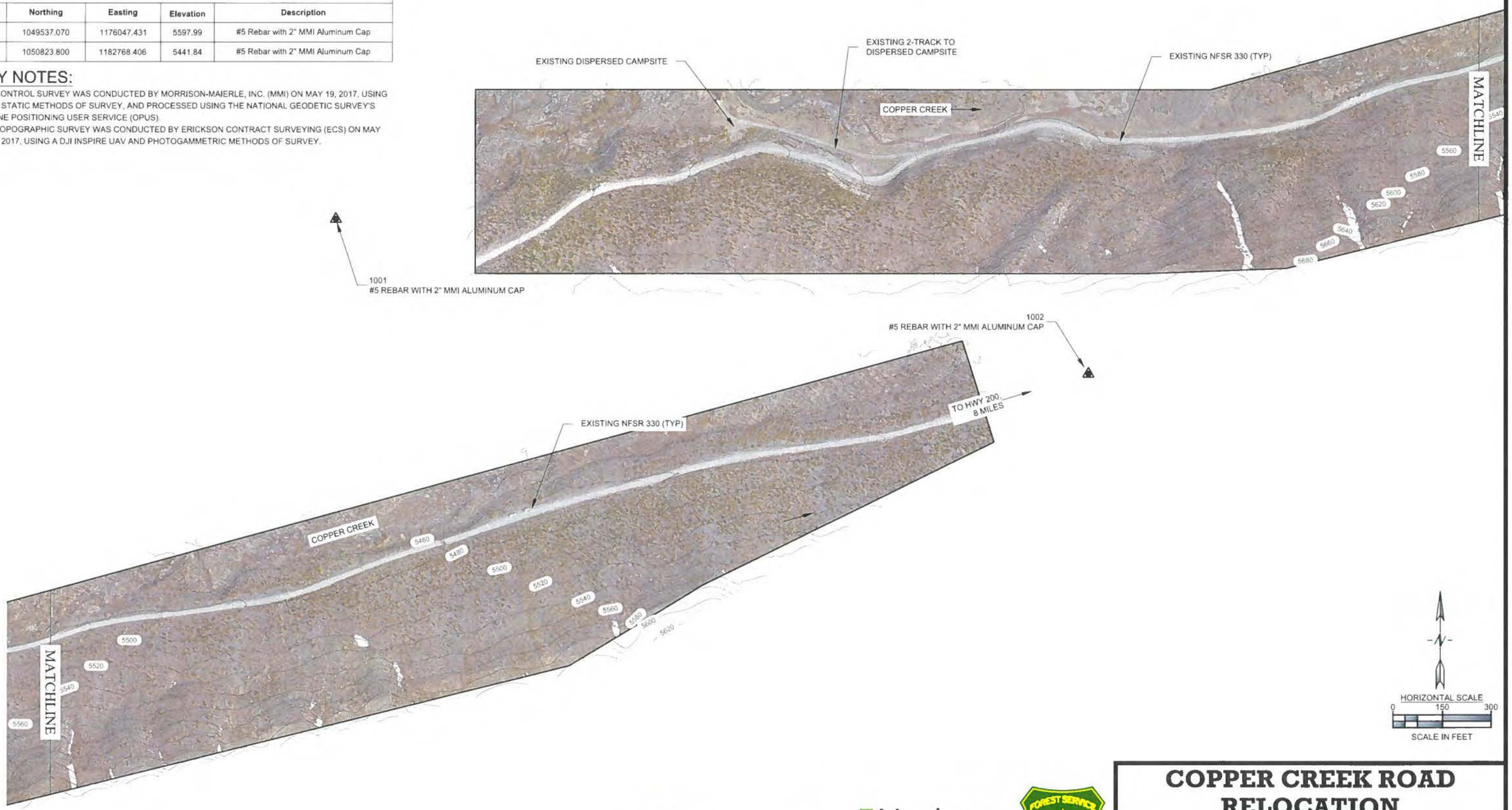
CONTROL TABLE

Copper Creek Topographic Survey

HORIZONTAL DATUM: Montana Coordinate System, NAD83(2011) Zone 2500				
VERTICAL DATUM: NAVD88	**(Geoid 12B)**			
UNITS: International Feet				
Control Point	**Northing**	**Easting**	**Elevation**	**Description**
1001	1049537.070	1176047.431	5597.99	#5 Rebar with 2" MMI Aluminum Cap
1002	1050823.800	1182768.406	5441.84	#5 Rebar with 2" MMI Aluminum Cap

SURVEY NOTES:

1. THE CONTROL SURVEY WAS CONDUCTED BY MORRISON-MAIERLE, INC. (MMI) ON MAY 19, 2017, USING GNSS STATIC METHODS OF SURVEY, AND PROCESSED USING THE NATIONAL GEODETIC SURVEY'S ON-LINE POSITIONING USER SERVICE (OPUS).
2. THE TOPOGRAPHIC SURVEY WAS CONDUCTED BY ERICKSON CONTRACT SURVEYING (ECS) ON MAY 22-23, 2017, USING A DJI INSPIRE UAV AND PHOTOGAMMETRIC METHODS OF SURVEY.



Big Blackfoot Chapter of Montana Trout Unlimited

Morrison Maierle
engineers • surveyors • planners • scientists
1 Engineering Place Helena, MT 59602
Phone: 406.442.3050

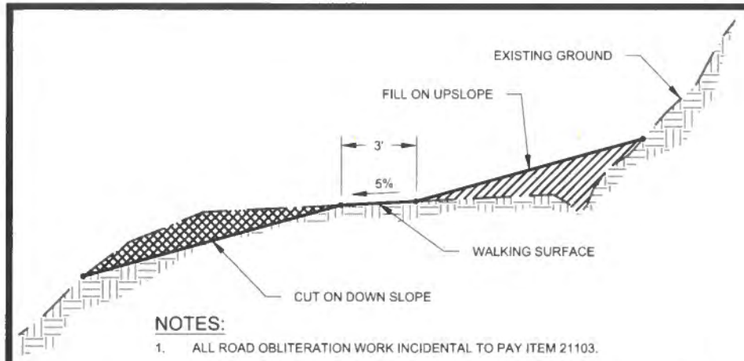
FOREST SERVICE US DEPARTMENT OF AGRICULTURE
REGION ONE

COPPER CREEK ROAD RELOCATION

NFSR 330, M.P. 8.15

EXISTING LAYOUT

Designed By:MDB	Design Checked:MDB	Sheet: **2** of **12**
Drawn By:DAH	Drawing Checked:DAH	

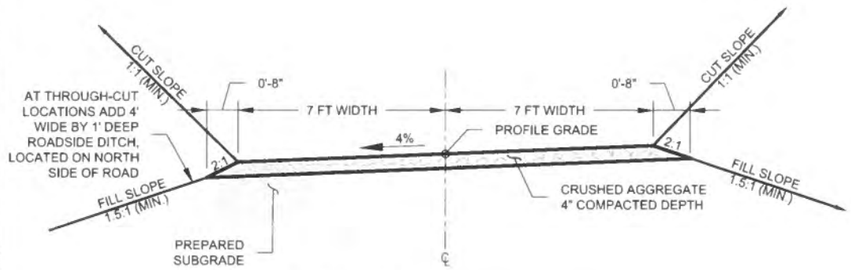


NOTES:

1. ALL ROAD OBLITERATION WORK INCIDENTAL TO PAY ITEM 21103.
2. WALKING SURFACE SHALL BE OF NATIVE MATERIALS. ALL DISTURBED SURFACE BETWEEN CATCH OF CUT/FILL SLOPES SHALL BE SCARIFIED AND SEEDED. SLASH SHALL BE SPREAD ON CUT/FILL SLOPES, NOT WALKING SURFACE.
3. CUT/FILL SLOPES SHALL VARY TO: (1) MIMIC NATURAL SLOPES, (2) PROVIDE POSITIVE DRAINAGE, (3) BALANCE CUT/FILL VOLUMES FROM OBLITERATION AND ROAD CONSTRUCTION.

TYPICAL EXISTING ROAD OBLITERATION

SCALE: N.T.S.

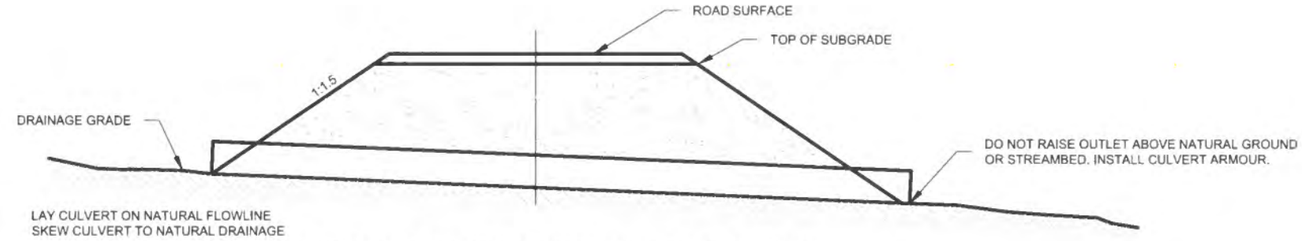


NEW GRAVEL SURFACE

ROAD NO.	FROM STA.	TO STA.	WIDTH
NFSR 330	0+00	57+50	14'

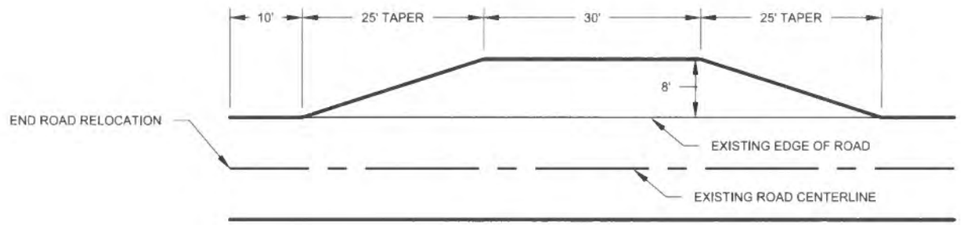
TYPICAL ROAD CROSS SECTION

SCALE: N.T.S.



TYPICAL CULVERT INSTALLATION DETAIL

SCALE: N.T.S.

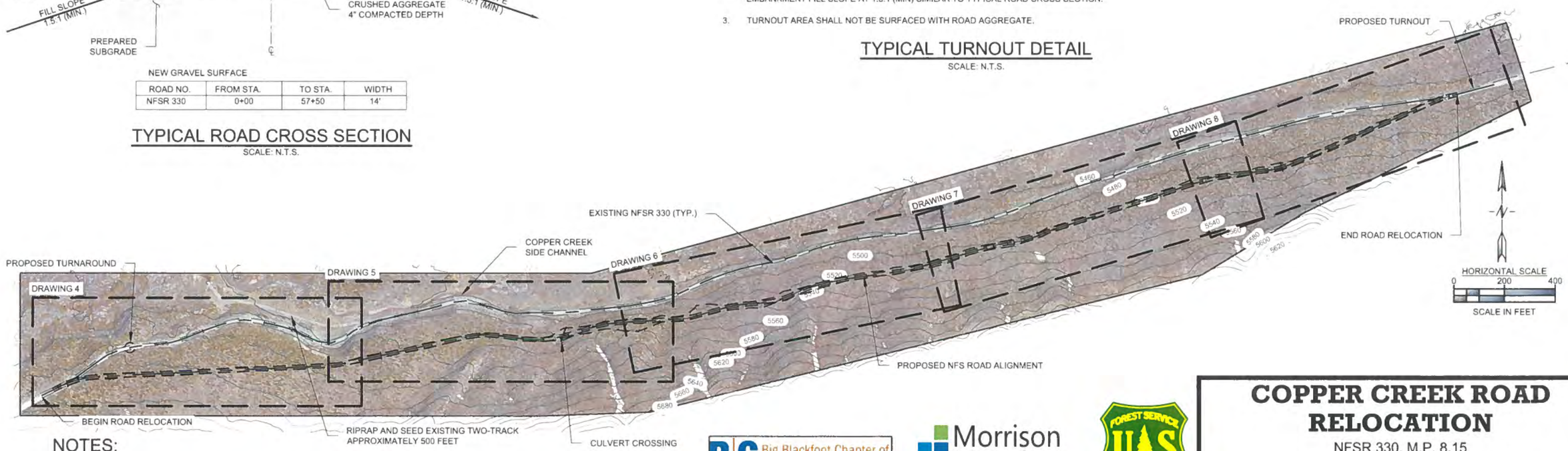


NOTES:

1. ALL TURNOUT WORK INCIDENTAL TO PAY ITEM 20401.
2. EXTEND 4% CROSS SLOPE FROM EDGE OF EXISTING ROAD TO EDGE OF TURNOUT. EMBANKMENT FILL SLOPE AT 1.5:1 (MIN) SIMILAR TO TYPICAL ROAD CROSS SECTION.
3. TURNOUT AREA SHALL NOT BE SURFACED WITH ROAD AGGREGATE.

TYPICAL TURNOUT DETAIL

SCALE: N.T.S.



NOTES:

1. PRESERVE EXISTING ROAD FROM STATION 0+00 TO PROPOSED TURNAROUND.
2. EXISTING ROADWAY OBLITERATION SHALL INCLUDE ALL EXISTING ROAD LENGTH FROM PROPOSED TURNAROUND TO END OF PROPOSED ROAD.

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REGION ONE

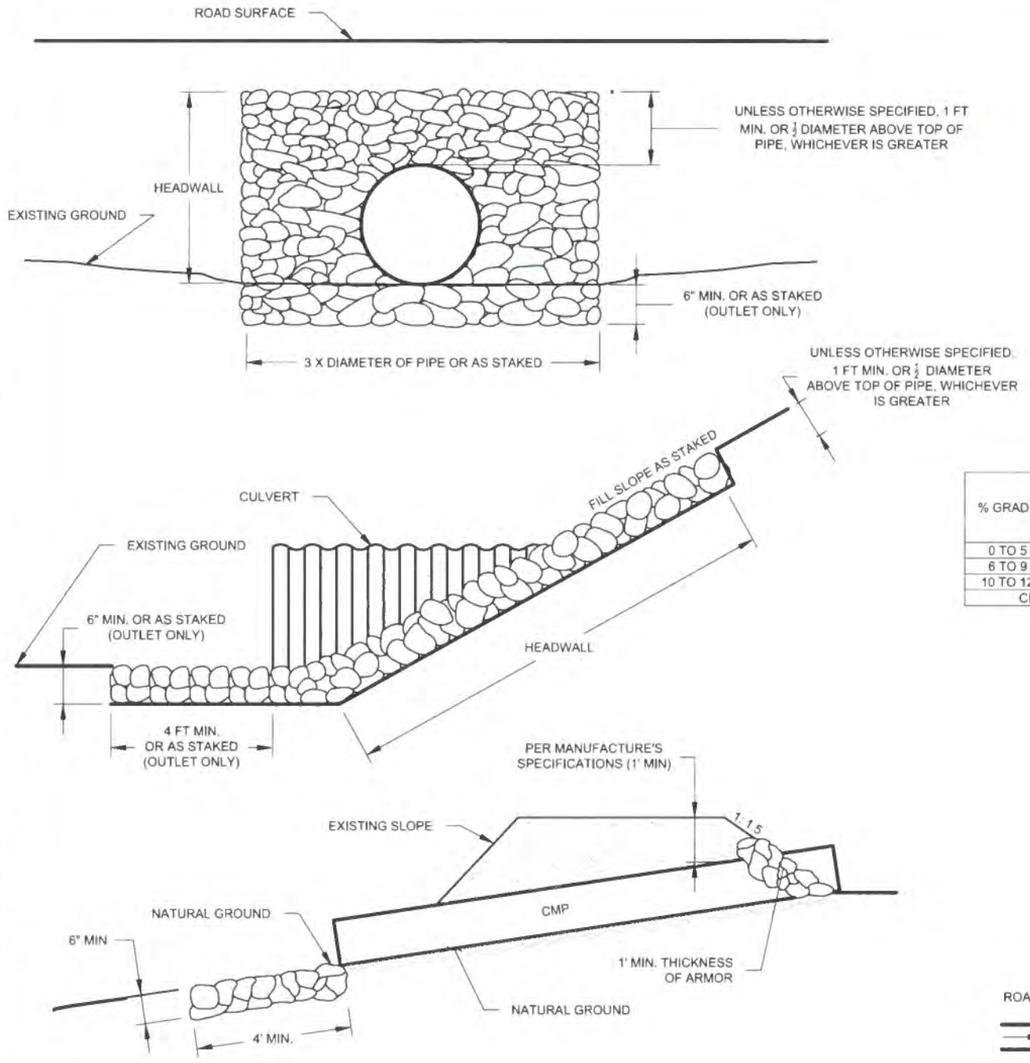
COPPER CREEK ROAD RELOCATION

NFSR 330, M.P. 8.15

GENERAL LAYOUT

Designed By:MDB	Design Checked:MDB
Drawn By:DAH	Drawing Checked:DAH

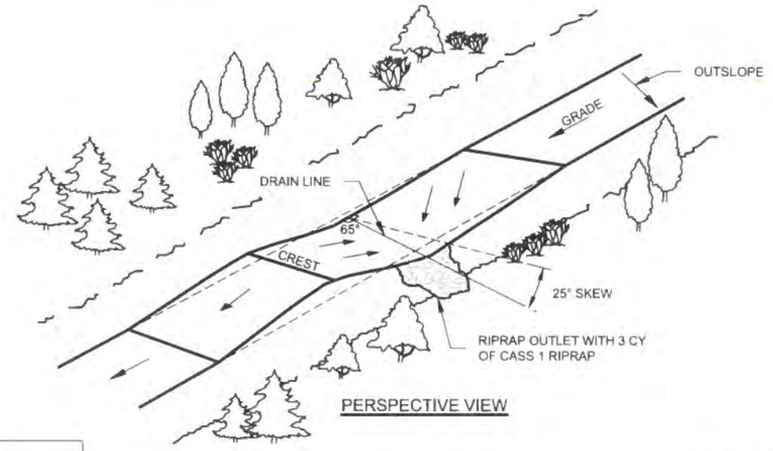
Sheet: 3 of 12



NOTE:
1. CULVERT INLETS AND OUTLETS SHALL BE CLEAN PRIOR TO PLACING RIPRAP.
2. ALL ARMORING IS INCIDENTAL TO CULVERT PAY ITEMS.

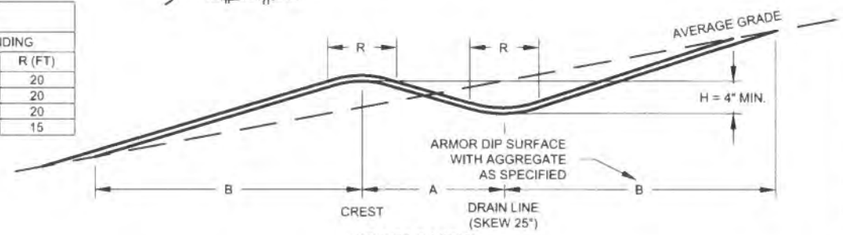
CULVERT ARMORING DETAIL

SCALE: N.T.S.



PERSPECTIVE VIEW

% GRADE	LOWBOY				LOG TRUCK			
	LENGTH	TAPER	ROUNDING		LENGTH	TAPER	ROUNDING	
	A (FT)	B (FT)	%	R (FT)	A (FT)	B (FT)	%	R (FT)
0 TO 5	30	30	7	30	20	25	10	20
6 TO 9	30	50	7	30	20	40	10	20
10 TO 12	30	60	7	30	20	50	10	20
CHORD LENGTH FOR ROUNDING				15	CHORD LENGTH FOR ROUNDING			15

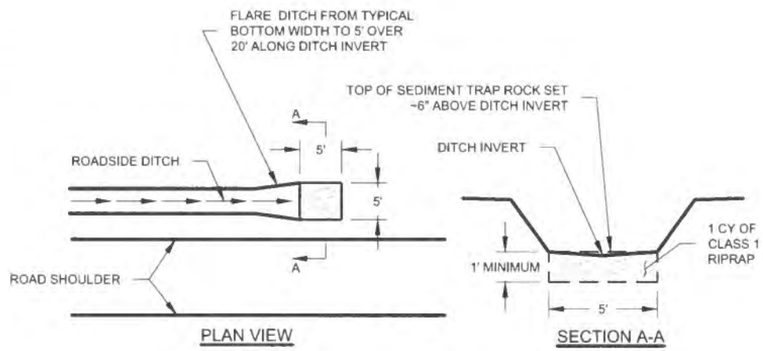


PROFILE VIEW

NOTES:
1. MINIMUM CROSS SLOPE OF DRAINLINE: 4% MIN AND 6% MAX.
2. TAPER LENGTH SHALL BE WITHIN 10% OF LISTED LENGTHS. VEHICLE TYPE SHALL BE DESIGNATED BY FOREST SERVICE.
3. WHEN RIPRAP IS SPECIFIED AT OUTLET, IT SHALL BE SHAPED TO ASSURE WATER GOES ONTO RIPRAP, NOT AROUND. RIPRAP TOP ELEVATION SHALL BE AT THE TOP OF FINISHED OUTLET GRADE, NOT SUBGRADE.
4. ALL GRADE DIP WORK AND MATERIALS INCIDENTAL TO PAY ITEM 20431.

TYPICAL GRADE DIP DETAIL

SCALE: N.T.S.



PLAN VIEW SECTION A-A

NOTE:
1. SEDIMENT TRAPS SHALL BE LOCATED AT OUTLET OF EACH ROAD SIDE DITCH AS SHOWN ON DRAWINGS.
2. LOCATION AND ORIENTATION MAY BE ADJUSTED BY COR.
3. ALL SEDIMENT TRAP WORK AND MATERIALS INCIDENTAL TO PAY ITEM 15710.

SEDIMENT TRAP DETAIL

SCALE: N.T.S.

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COPPER CREEK ROAD RELOCATION

NFSR 330, M.P. 8.15

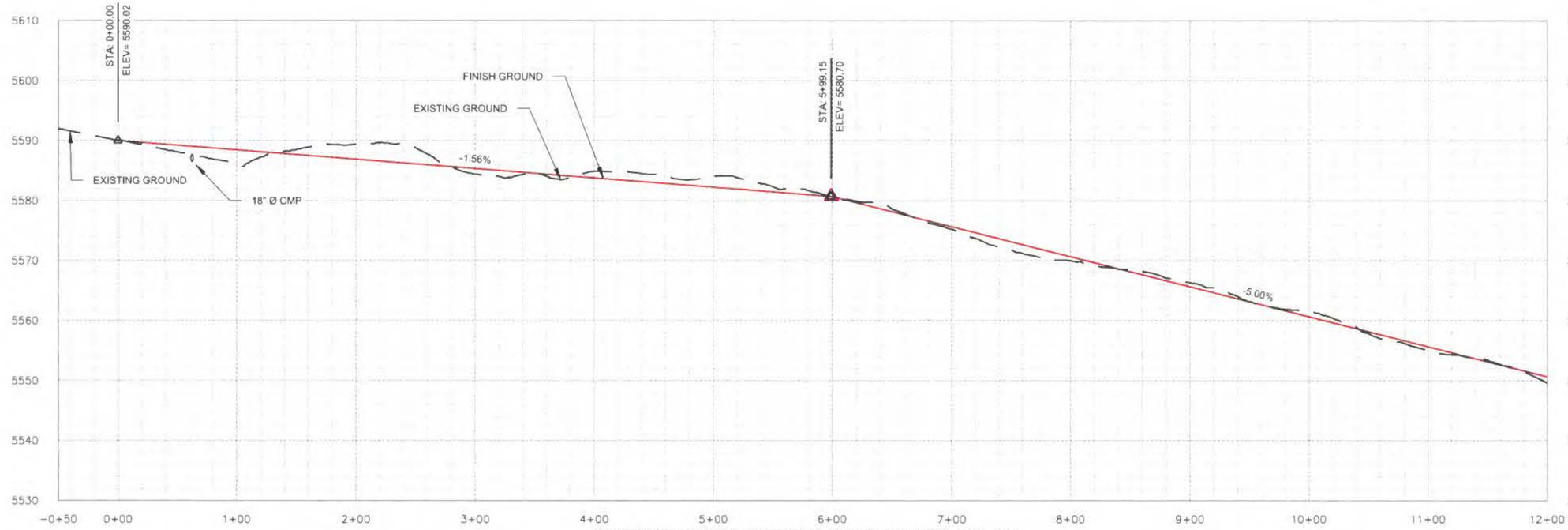
ROAD DETAILS

Designed By:MDB	Design Checked:MDB	Sheet: **4** of **12**
Drawn By:DAH	Drawing Checked:DAH	

R:\48350\004_COPPER CREEK ROAD\ACAD\SHEETS\4 ROAD DETAILS.DWG PLOTTED BY:MATT BARNES ON Feb/08/2018

CUT- FILL LEGEND (IN FEET)		
MINIMUM	MAXIMUM	COLOR
-17	-15	
-15	-13	
-13	-11	
-11	-9	
-9	-7	
-7	-5	
-5	-3	
-3	-1	
-1	1	
1	3	
3	5	
5	7	
7	9	
9	11	
11	13	
13	15	

HORIZONTAL SCALE
0 50 100
SCALE IN FEET



ROAD CENTERLINE STA 0+00 TO STA 12+00

CUT/FILL VOLUMES TABLE (CY)				
START STA.	END STA.	CUT	FILL	NET
0+00	3+00	182	104	-78
3+00	6+00	149	34	-115
6+00	12+00	81	122	41

VERTICAL SCALE
0 10 20
SCALE IN FEET

NOTES:

1. ALL HORIZONTAL CURVE RADII ARE GREATER THAN 400 FEET.
2. SEDIMENT TRAP AND GRADE DIP LOCATIONS WILL BE STAKED BY COR
3. TURNAROUND AREA SHALL BE CONSTRUCTED SIMILAR TO NEW ROADWAY WITH AGGREGATE SURFACE AND COMPACTION. GRADE SURFACE TO DRAIN NORTH AT MINIMUM 5% SLOPE.
4. LOCATIONS WHERE 4% ROAD CROSS IS EXTENDED NORTH TO AVOID THROUGH-CUTS WILL BE STAKED BY COR. THESE AREAS SHALL NOT BY SURFACED WITH ROAD AGGREGATE.
5. LOCATIONS WHERE 4% ROAD CROSS SLOPE IS EXTENDED TO SOUTH TO AVOID DEPRESSIONS WILL BE STAKED BY COR. THESE AREAS SHALL NOT BY SURFACED WITH ROAD AGGREGATE.

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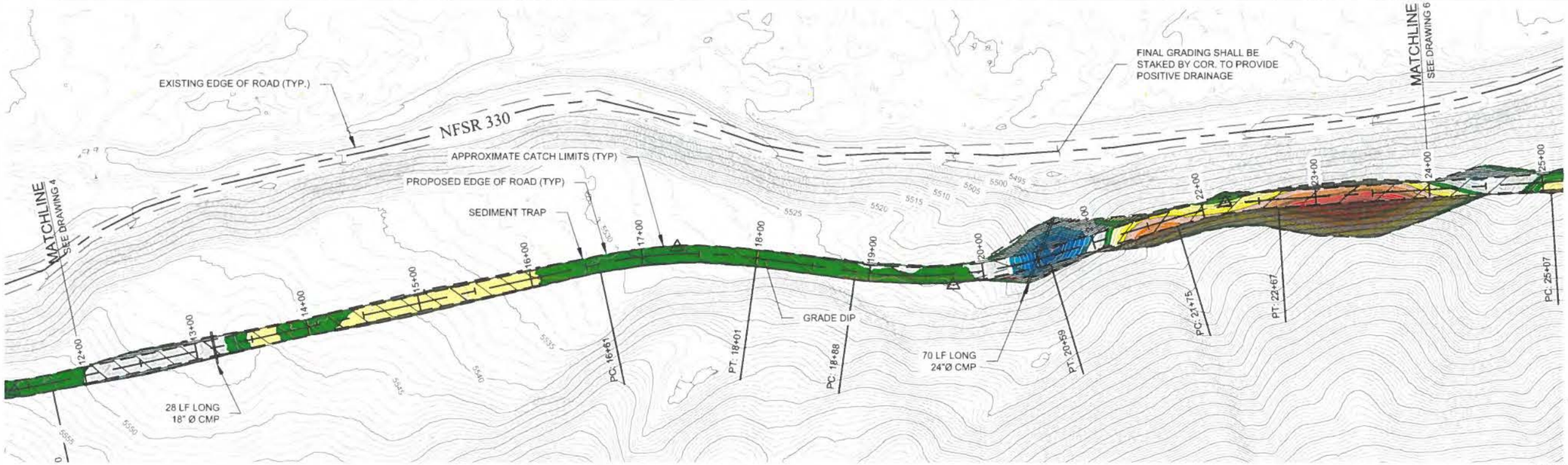
NFSR 330, M.P. 8.15

ROAD P&P STA 0+00 TO STA 12+00

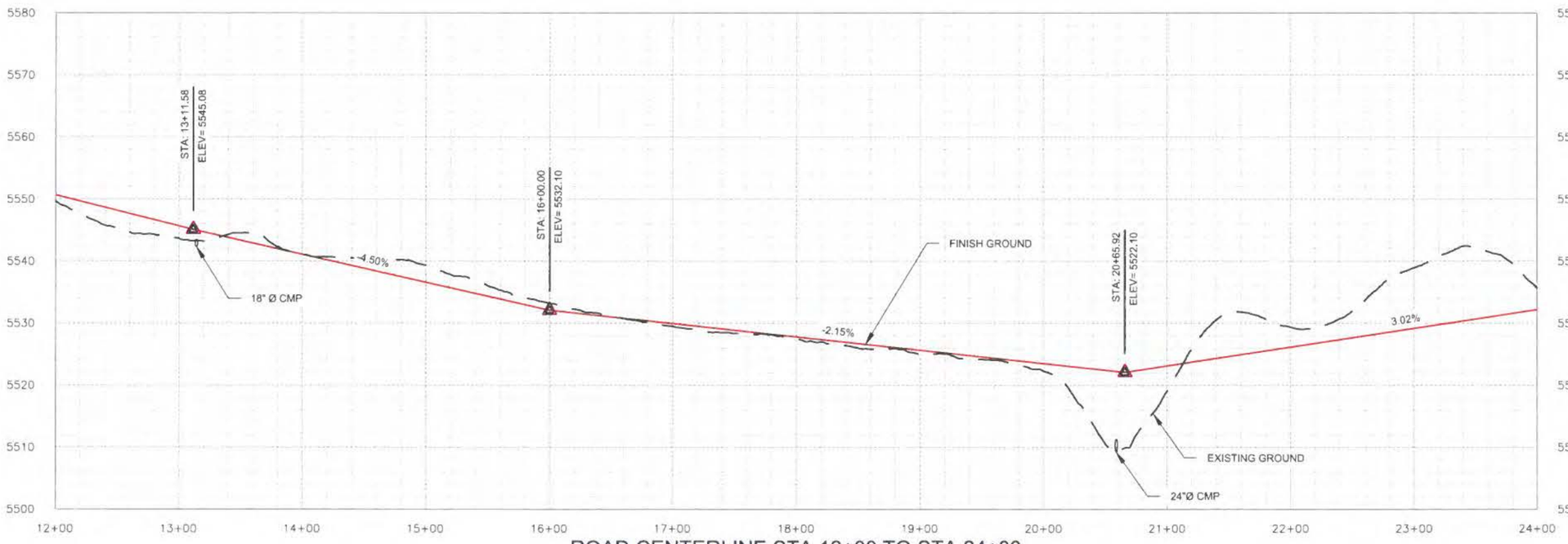
Designed By:MDB	Design Checked:MDB	Sheet: **5** of **12**
Drawn By:DAH	Drawing Checked:DAH	

R:\48350\004_COPPER CREEK ROAD\ACAD\SHEETS\5-6 ROAD P&P.DWG PLOTTED BY:MATT BARNES ON Feb/16/2018



CUT- FILL LEGEND (IN FEET)		
MINIMUM	MAXIMUM	COLOR
-17	-15	
-15	-13	
-13	-11	
-11	-9	
-9	-7	
-7	-5	
-5	-3	
-3	-1	
-1	1	
1	3	
3	5	
5	7	
7	9	
9	11	
11	13	
13	15	

HORIZONTAL SCALE
0 50 100
SCALE IN FEET



ROAD CENTERLINE STA 12+00 TO STA 24+00

CUT/FILL VOLUMES TABLE (CY)				
START STA.	END STA.	CUT	FILL	NET
12+00	16+00	229	188	-41
16+00	20+00	18	92	74
20+00	21+20	7	799	792
21+20	24+00	2265	2	-2263

VERTICAL SCALE
0 10 20
SCALE IN FEET

NOTES:

1. ALL HORIZONTAL CURVE RADII ARE GREATER THAN 400 FEET.
2. SEDIMENT TRAP AND GRADE DIP LOCATIONS WILL BE STAKED BY COR.
3. LOCATIONS WHERE 4% ROAD CROSS IS EXTENDED NORTH TO AVOID THROUGH-CUTS WILL BE STAKED BY COR. THESE AREAS SHALL NOT BY SURFACED WITH ROAD AGGREGATE.
4. LOCATIONS WHERE 4% ROAD CROSS SLOPE IS EXTENDED TO SOUTH TO AVOID DEPRESSIONS WILL BE STAKED BY COR. THESE AREAS SHALL NOT BY SURFACED WITH ROAD AGGREGATE.

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ROAD P&P STA 12+00 TO STA 24+00

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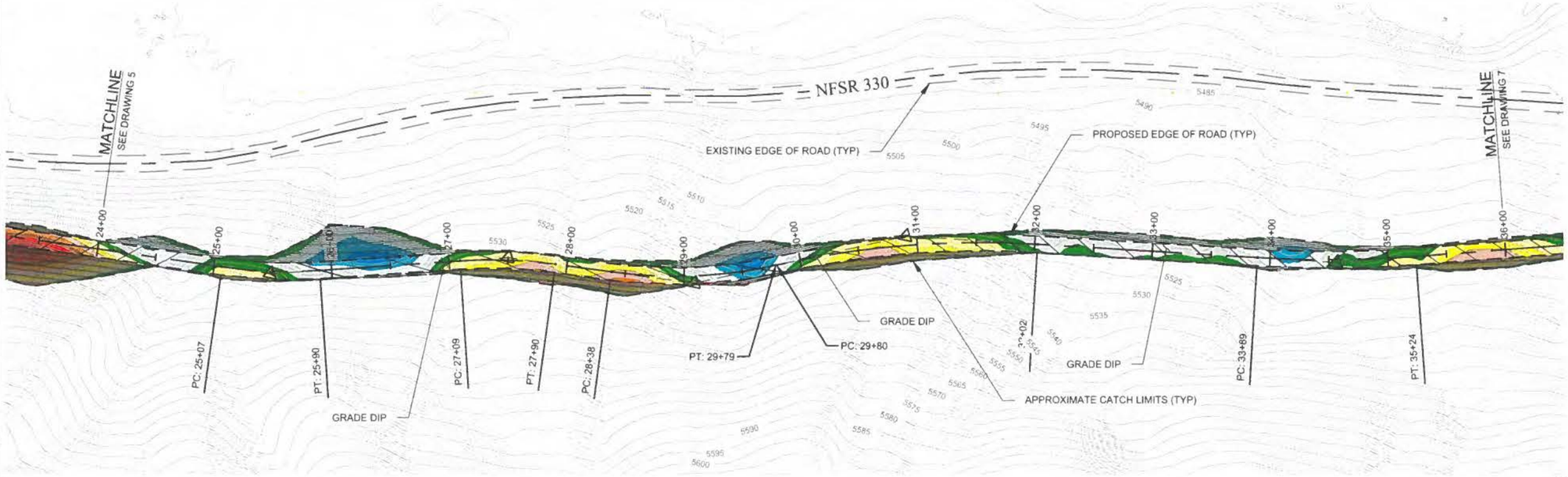
Drawn By:DAH	Drawing Checked:DAH	

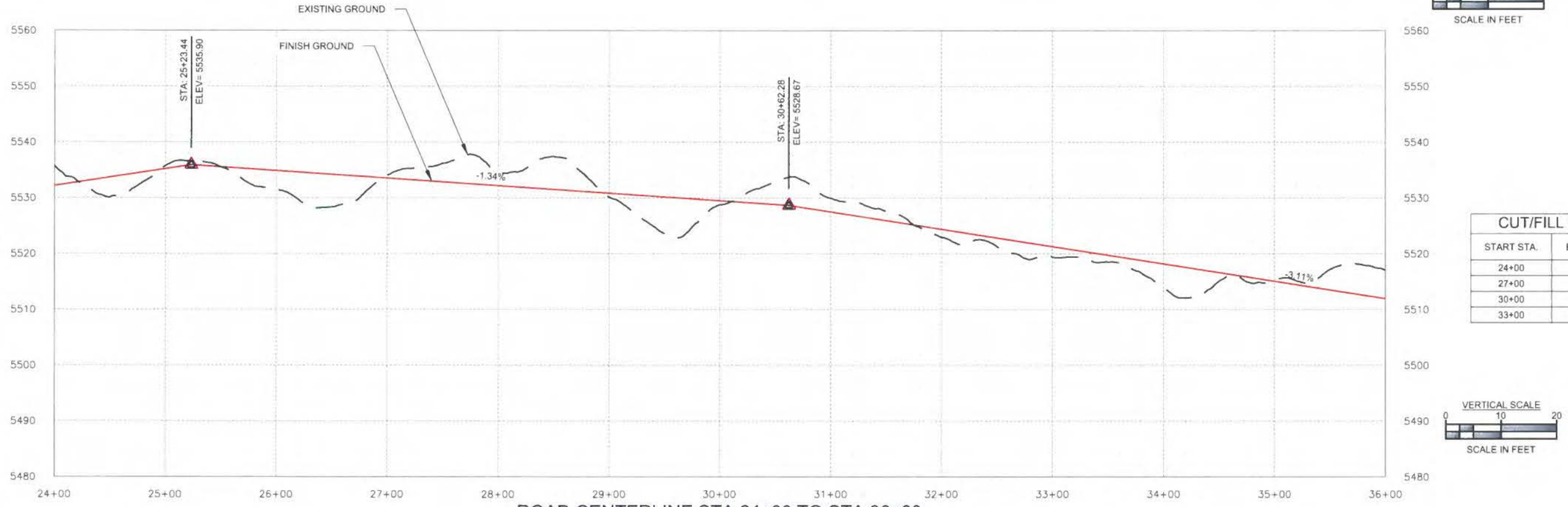
R:\48351004_COPPER CREEK ROAD\ACAD\SHEETS\5-6 ROAD P&P.DWG PLOTTED BY MATT BARNES ON Feb/16/2018



CUT- FILL LEGEND (IN FEET)		
MINIMUM	MAXIMUM	COLOR
-17	-15	
-15	-13	
-13	-11	
-11	-9	
-9	-7	
-7	-5	
-5	-3	
-3	-1	
-1	1	
1	3	
3	5	
5	7	
7	9	
9	11	
11	13	
13	15	

N

HORIZONTAL SCALE
0 50 100
SCALE IN FEET



ROAD CENTERLINE STA 24+00 TO STA 36+00

CUT/FILL VOLUMES TABLE (CY)				
START STA.	END STA.	CUT	FILL	NET
24+00	27+00	120	861	741
27+00	30+00	543	390	-153
30+00	33+00	340	157	-183
33+00	36+00	241	355	114

VERTICAL SCALE
0 10 20
SCALE IN FEET

NOTES:

1. ALL HORIZONTAL CURVE RADII ARE GREATER THAN 400 FEET.
2. SEDIMENT TRAP AND GRADE DIP LOCATIONS WILL BE STAKED BY COR.
3. LOCATIONS WHERE 4% ROAD CROSS IS EXTENDED NORTH TO AVOID THROUGH-CUTS WILL BE STAKED BY COR. THESE AREAS SHALL NOT BY SURFACED WITH ROAD AGGREGATE.
4. LOCATIONS WHERE 4% ROAD CROSS SLOPE IS EXTENDED TO SOUTH TO AVOID DEPRESSIONS WILL BE STAKED BY COR. THESE AREAS SHALL NOT BY SURFACED WITH ROAD AGGREGATE.

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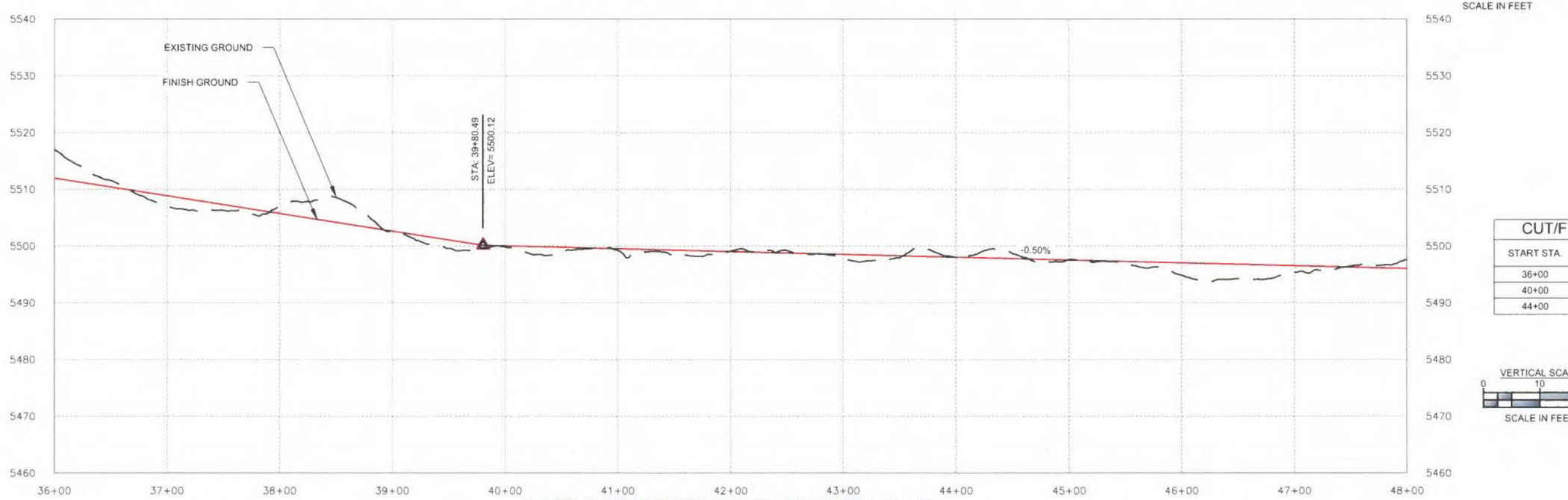
ROAD P&P STA 24+00 TO STA 36+00

Designed By:MDB	Design Checked:MDB
Drawn By:DAH	Drawing Checked:DAH

CUT- FILL LEGEND (IN FEET)		
MINIMUM	MAXIMUM	COLOR
-17	-15	
-15	-13	
-13	-11	
-11	-9	
-9	-7	
-7	-5	
-5	-3	
-3	-1	
-1	1	
1	3	
3	5	
5	7	
7	9	
9	11	
11	13	
13	15	

HORIZONTAL SCALE
0 50 100
SCALE IN FEET



ROAD CENTERLINE STA 36+00 TO STA 48+00

CUT/FILL VOLUMES TABLE (CY)				
START STA.	END STA.	CUT	FILL	NET
36+00	40+00	346	232	-114
40+00	44+00	81	176	95
44+00	48+00	92	310	218

VERTICAL SCALE
0 10 20
SCALE IN FEET

NOTES:

1. ALL HORIZONTAL CURVE RADII ARE GREATER THAN 400 FEET.
2. SEDIMENT TRAP AND GRADE DIP LOCATIONS WILL BE STAKED BY COR.
3. LOCATIONS WHERE 4% ROAD CROSS IS EXTENDED NORTH TO AVOID THROUGH-CUTS WILL BE STAKED BY COR. THESE AREAS SHALL NOT BY SURFACED WITH ROAD AGGREGATE.
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ROAD P&P STA 36+00 TO STA 48+00

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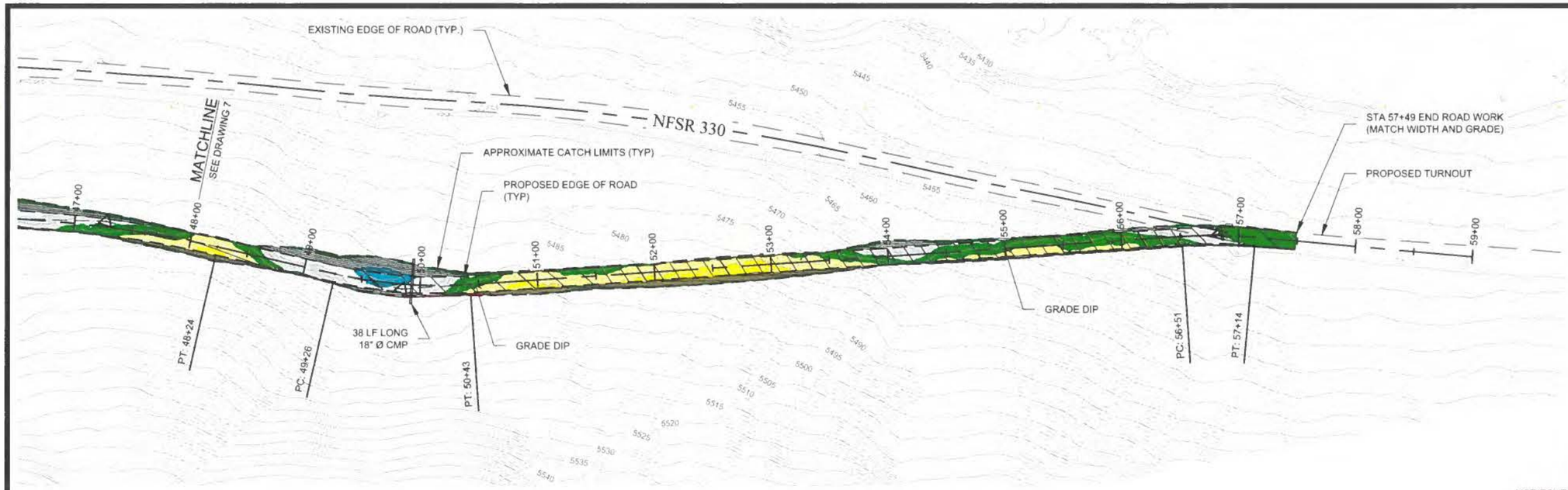
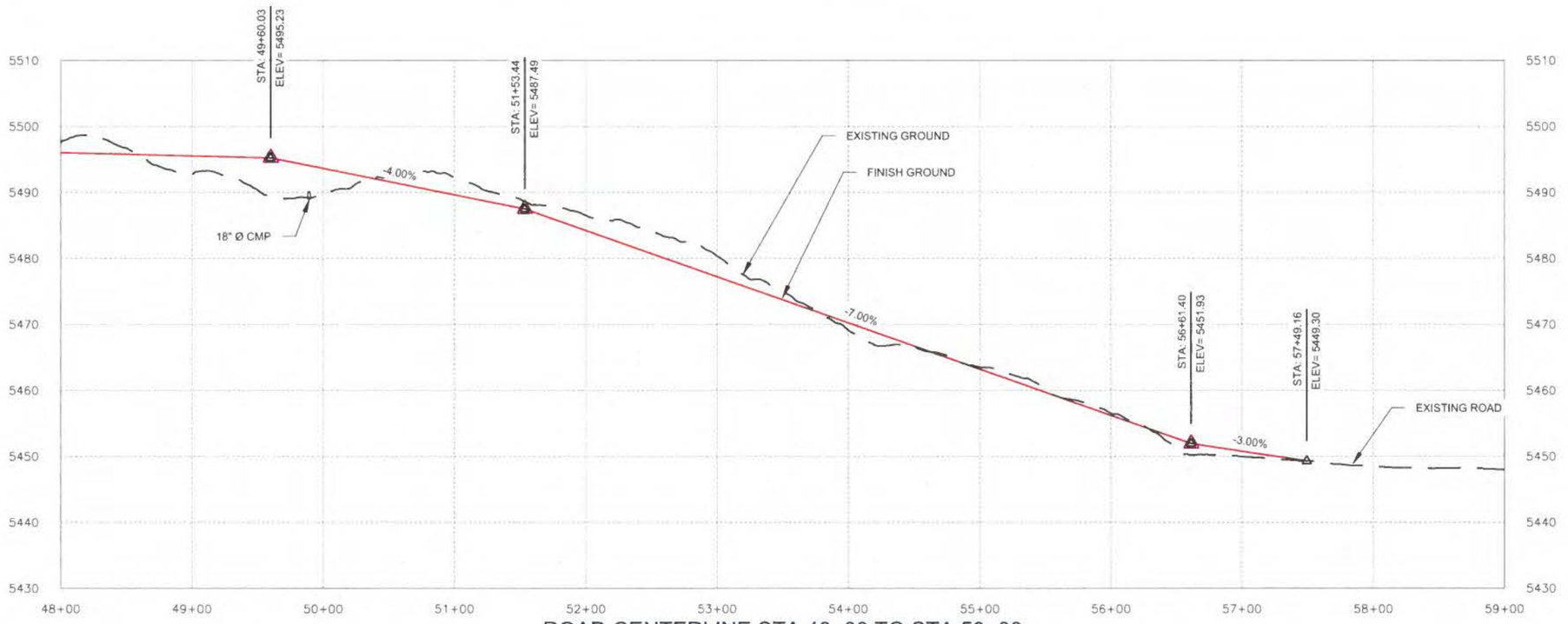
Drawn By:DAH	Drawing Checked:DAH



CUT- FILL LEGEND (IN FEET)		
MINIMUM	MAXIMUM	COLOR
-17	-15	
-15	-13	
-13	-11	
-11	-9	
-9	-7	
-7	-5	
-5	-3	
-3	-1	
-1	1	
1	3	
3	5	
5	7	
7	9	
9	11	
11	13	
13	15	

HORIZONTAL SCALE
0 50 100
SCALE IN FEET



ROAD CENTERLINE STA 48+00 TO STA 59+00

CUT/FILL VOLUMES TABLE (CY)				
START STA.	END STA.	CUT	FILL	NET
48+00	50+40	77	465	388
50+40	54+00	518	20	-498
54+00	57+49.16	67	136	69

VERTICAL SCALE
0 10 20
SCALE IN FEET

NOTES:

1. ALL HORIZONTAL CURVE RADII ARE GREATER THAN 400 FEET.
2. SEDIMENT TRAP AND GRADE DIP LOCATIONS WILL BE STAKED BY COR.
3. LOCATIONS WHERE 4% ROAD CROSS IS EXTENDED NORTH TO AVOID THROUGH-CUTS WILL BE STAKED BY COR. THESE AREAS SHALL NOT BY SURFACED WITH ROAD AGGREGATE.
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NFSR 330, M.P. 8.15

ROAD P&P STA 48+00 TO STA 57+50

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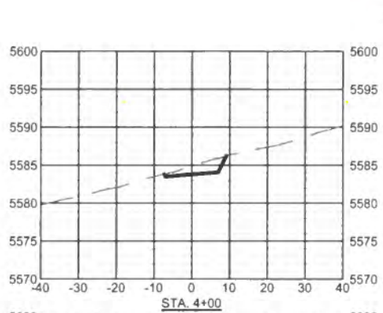
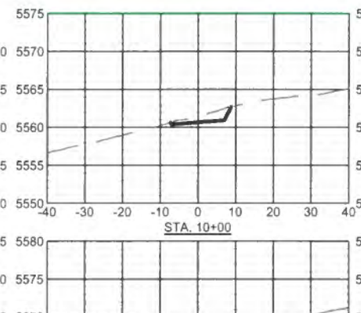
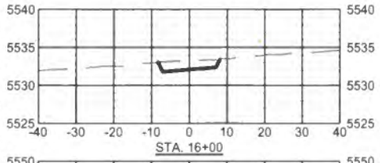
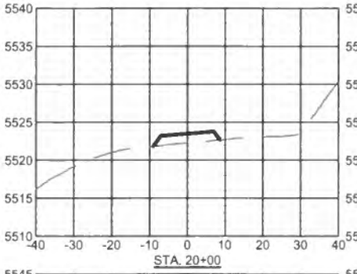
Drawn By:DAH	Drawing Checked:DAH	

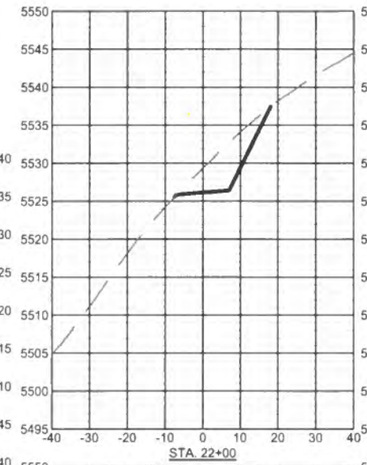
R:\4835\004_COPPER CREEK ROAD\ACAD\SHEETS\7-9 ROAD P&P DWG PLOTTED BY:ZACHARIAH CAMPBELL ON Feb/16/2018

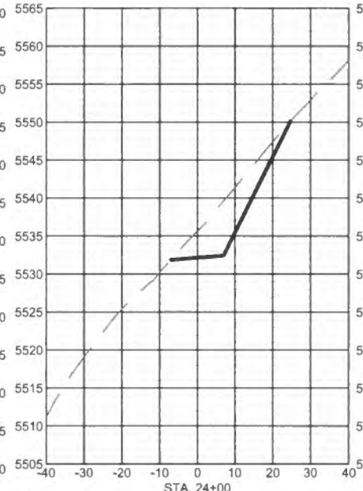


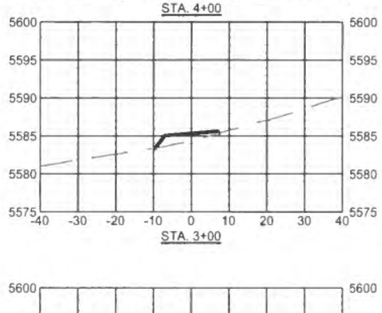


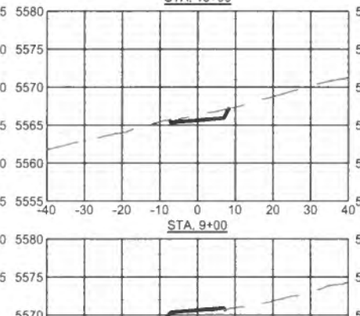


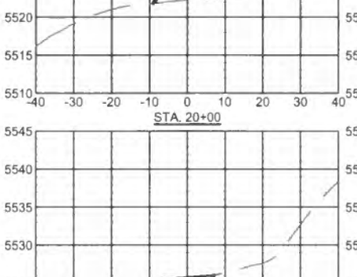


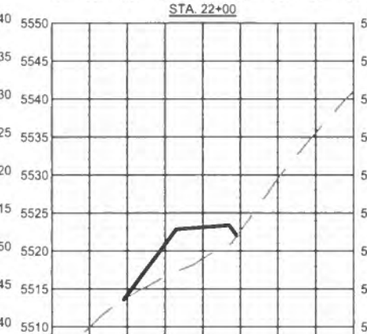


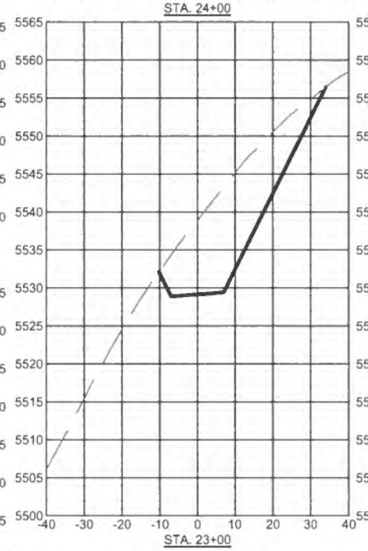


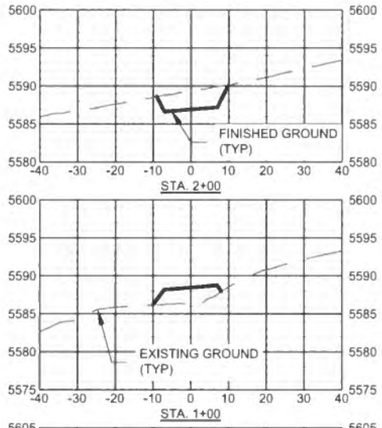


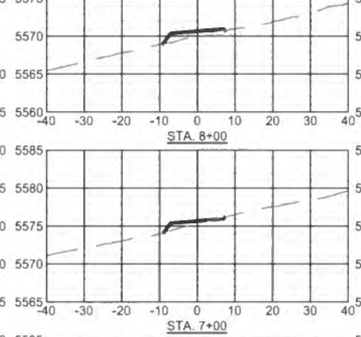


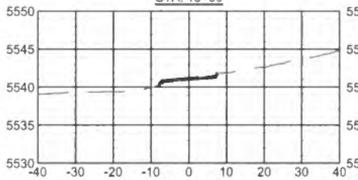


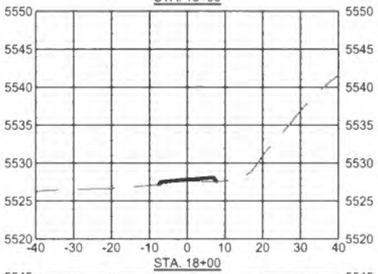


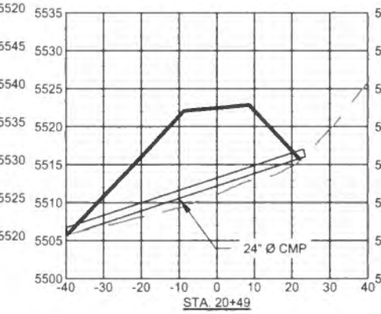


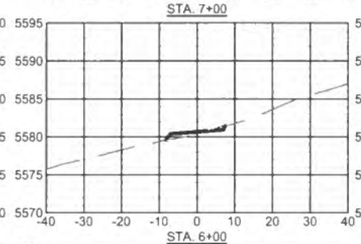


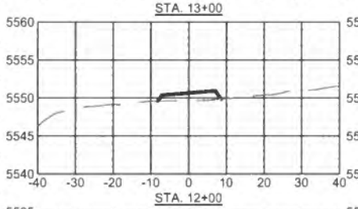


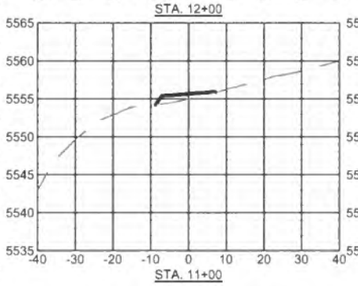


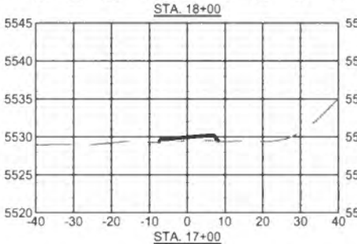


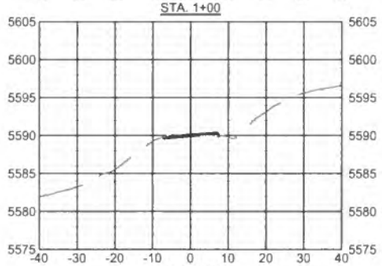


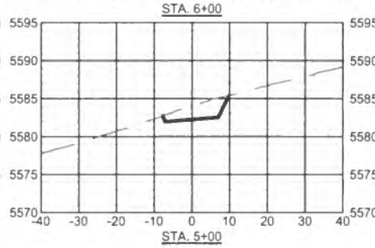












NOTES:

1. SECTION AT STATION 20+49 IS SKEWED TO ROAD CENTERLINE.
2. LOCATIONS WHERE THROUGHCUTS AND DEPRESSIONS SHALL BE AVOIDED BY EXTENDING ROAD CROSS SLOPE WILL BE STAKED BY COR.

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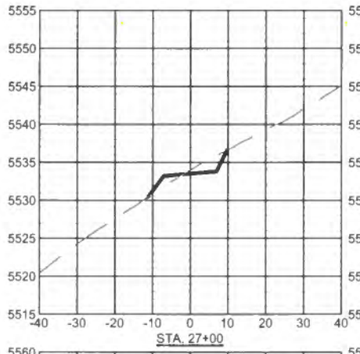
COPPER CREEK ROAD RELOCATION

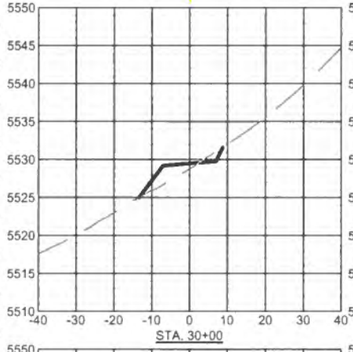
NFSR 330, M.P. 8.15

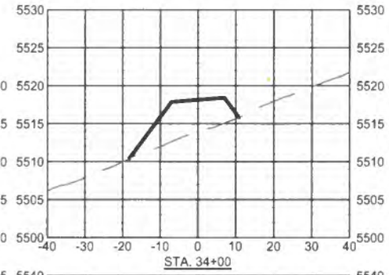
CROSS SECTIONS STA 0+00 TO STA 24+00

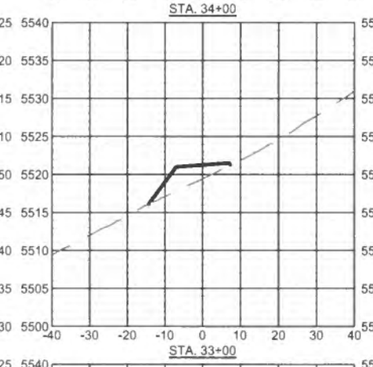
Designed By:MDB	Design Checked:MDB	Sheet: **10** of **12**
Drawn By:DAH	Drawing Checked:DAH	

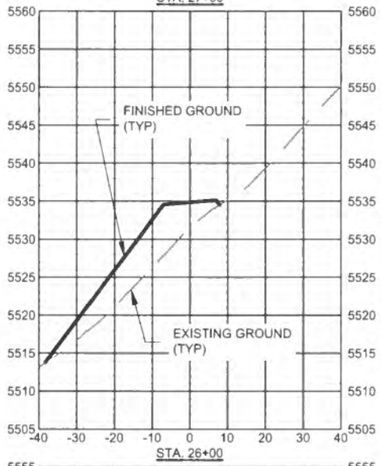
R:\48350004_COPPER CREEK ROAD\ACAD\SHEETS\10-12 CROSS SECTIONS.DWG PLOTTED BY ZACHARIAH CAMPBELL ON Feb/09/2018

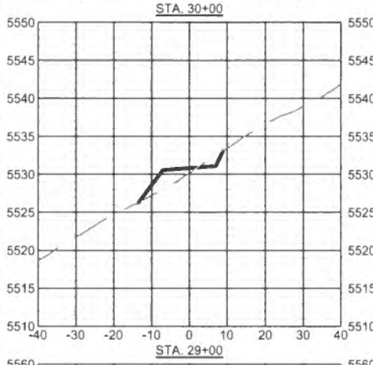


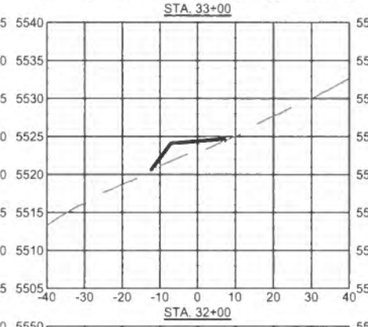


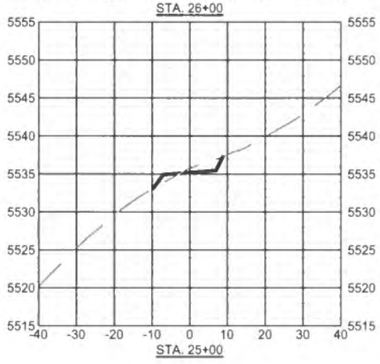


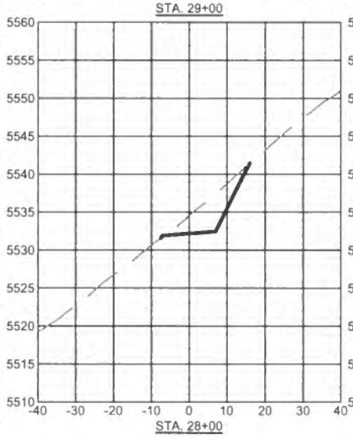


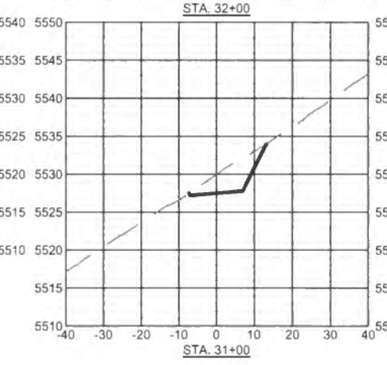


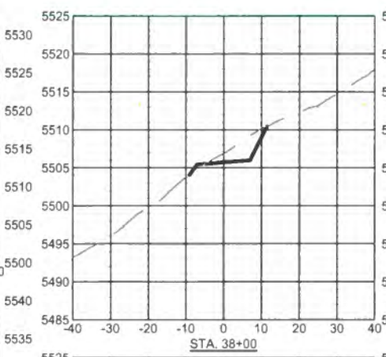


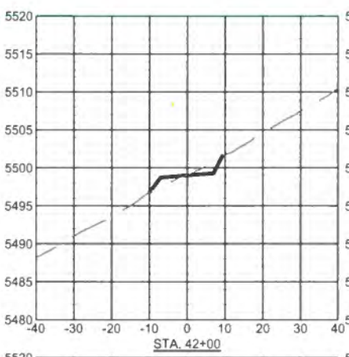


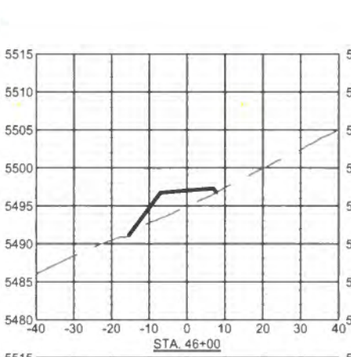


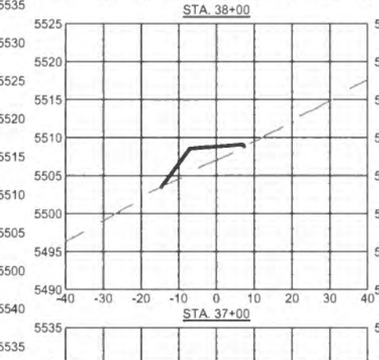


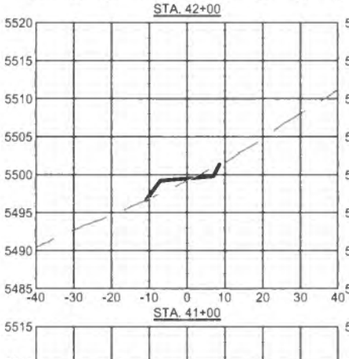


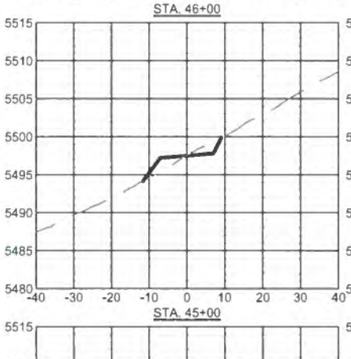


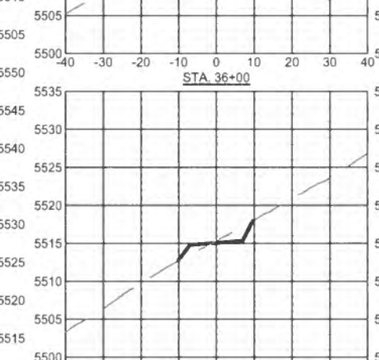


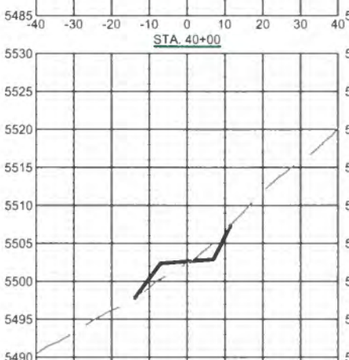


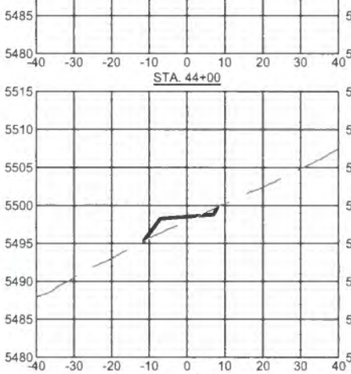












NOTES:

1. LOCATIONS WHERE THROUGHCUTS AND DEPRESSIONS SHALL BE AVOIDED BY EXTENDING ROAD CROSS SLOPE WILL BE STAKED BY COR.

Big Blackfoot Chapter of Montana Trout Unlimited

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NFSR 330, M.P. 8.15

CROSS SECTIONS STA 25+00 TO STA 46+00

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Drawn By:DAH	Drawing Checked:DAH	

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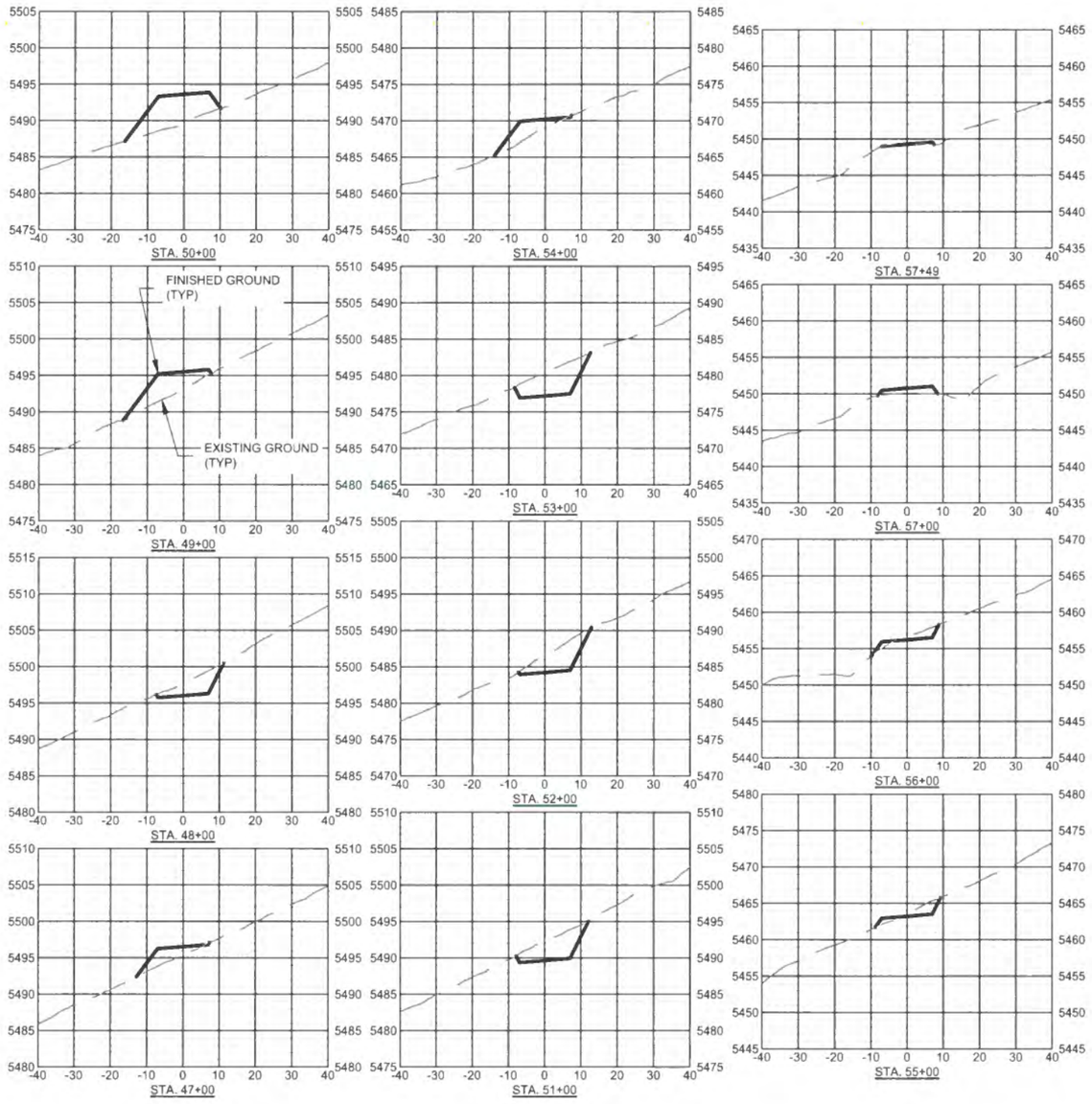

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CROSS SECTIONS STA 47+00 TO STA 57+49

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Drawn By:DAH	Drawing Checked:DAH	

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